1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6



The recitation of the *pu'e*, creation chant of the world and nature, made the work complete by uniting the new product of handicraft with creation from its beginnings, right down through the growth of all things to the new canoe. (See Sacred Chants.) The bedecking of the canoe and its house had this ceremonial significance: the *koufau* were the sign of *tapu; hiapo*, the cloth that covered the loins of *tapu* men symbolized both power and sacredness; and the *kopinipini* embodied the same sense of sacredness that brought about the use of the coconut leaf as a head and body dress by priests, and as a sign of truce.

Mr. Linton found that in both Hana Hehe and Pua Ma'u, on Hiva Oa, it was the custom, when a war canoe was being made, for a warrior of great prowess to sleep on or in the log from which the hull was being formed, during the nights of the period of its manufacture. This was in order that the canoe might have imparted to it the qualities of *mana*, power, and luck, which the warrior embodied.

All canoes used for war or the work of fishing were *tapu* to all women except chiefesses or priestesses for the reason that their contact with the canoe would have profaned it, hence made it lose its power (*mana*). Canoes that were built for voyaging must have been an exception to this rule, for women accompanied their men on voyages. If a fishing canoe were profaned by the touch of a woman, it was purified by having hair burned on the bow (7).

## Types of Canoes

As full details of canoe construction are given in the work of another member (20) of the Marquesas party, the subject will be treated briefly here.

In the Marquesas there were craft of all kinds varying from those merely large enough for children to play in to the great exploring canoes. Porter gives excellent descriptions of the appearance of different forms of craft that he observed when he visited Nuku Hiva. His description of fishing canoes is quoted in the section devoted to fishing, that of war canoes under war.

Of canoes constructed for exploration Porter says (24, p. 103), "The canoes formed for the sole purpose of going in search of new lands are of a still larger construction, and are rigged in the same manner." It appears that these canoes for exploration were frequently double—that is, made by lashing two canoe bodies together, leaving a space of several yards between. On the cross-pieces were laid bars forming a platform. So far as I have ascertained, the Marquesas' canoes never had a house on this platform. In the story of Pohu such a platform is described as having

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6



a rail around it. The supplies for a voyage were kept here and in the body of the canoe, and the people on board lived on the platform and below decks. According to a trustworthy Fatu Hiva informant, such a canoe would have two sails, the masts being stepped in the usual place in the forward end of each hull. War canoes and canoes for exploration—according to modern natives—were as much as sixty feet long. So far as I know, however, there is no record of a canoe of this size, although no limitation in the materials at the disposal of the native nor in his ability to utilize them would have prevented him from making canoes of this size or even larger.

Porter (24, p. 102) describes small temporary craft as follows:

> "They have also smaller canoes, which are commonly nothing more than the hollow keels of the large ones, after the upper works are taken off; these are furnished with outriggers, and are used for fishing about the harbour.

## Materials for Canoes

Materials used most for canoe-making were *temanu*, *hutu* (*Barringtonia speciosa*), and *mi'o*. The size of the canoe desired frequently determined the choice of a tree. The *temanu* was the largest of the available trees, and furnished the most durable wood. According to Linton breadfruit trees were used for smaller canoes.

## Parts of a Canoe[6a]

The main parts of a canoe consisted of the hull, adzed out of a tree trunk; detachable bow and stern piece; sideboards lashed on the edges of the gunwale; and an outrigger.

The main body or hull (*vaka*, *tua*, *tekee*) of the canoe was made of a hollowed single tree trunk. The bow (*piho*, *au'au*, *kanihi*, *hopeta*), a separate piece, was usually upturned, but both Cook (6, p. 711) and Stewart (26, p. 219) describe horizontal bows. Linton aptly describes the stern (*mu'i*, *hope au'au*) as narrowing "rapidly to form the tail, which was a long projection like a thick plank with the edge up, rising from the body of the stern piece at an angle of twenty to thirty degrees." (20.) The sideboards (*hue tana*) consisted of single hewn boards (*papa*) lashed (*humu*) to the gunwale of the canoe, but it is probable that the sideboards of some canoes were built up with several boards, for Porter (24, p. 79) described the sides as made of many pieces of the breadfruit tree, cut into the form of planks, and sewed together with the fibers of the outside shell of coconut. The seams are covered inside and out with strips of

[6a] The terminology is from Dordillon's ms. and from Linton's and my own notes.

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6



501 bamboo sewed to the edge of each plank, to keep in a stuffing of oakum, made of the coconut shell also.

Over the seams between the sideboards and the hull, both inside and outside, were strips made of wood or bamboo (*teka, vaho, teka oto, ta'i, patua*). Caulking of the seams at this place and at the point of attachment of bow and stern-piece was done usually with coconut cord fiber (*kaha*), or with feathers (*hu'u manu*). Langsdorff (18, p. 173) describes caulking with moss over which was rubbed resin from the breadfruit tree. Bulk-

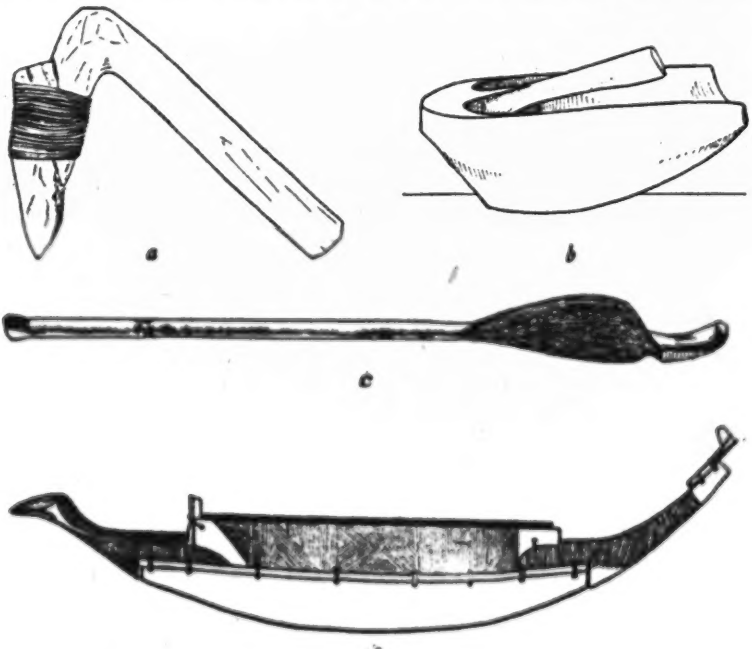



FIGURE 16.—Canoe and implements: *a*, adz; *b*, bailer; *c*, paddle; *d*, canoe.

heads in the body of the canoe are described by Porter. Seats (*papa tau*) for paddlers rested on an inner strip (*teka oto*) which covered the inboard seam between the sideboard and the hull. These strips were bound and held in place by sennit. The two rods (*kiato, hoa*) supporting the outrigger were usually fau poles; Marchand (22, p. 131) describes rods of bamboo. The supporting rods passed across the top of the canoe, being lashed to the top of each gunwale, or sideboard, by means of sennit that passed around the rod and through holes in the board. These lashings were ornamental

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6



and were called *teka*. The float (*ama*) of the outrigger (*ama*) was made of fau and was attached to the supporting rods by four or six small sticks (*ti'a ti'a*) which were inserted into holes on the outrigger float and bound on the supporting rods. The platform (*papua, hou'ua*) resting on the poles that held together a double canoe has been described. On all large single canoes used for fishing or for war there was at the stern an elevated platform (*papa'u*) on which the steersman stood. Stewart (26, pp. 211-20) describes "a high platform deeply fringed with the pendant leaves of a palm," on which the steersman stood on the stern of a canoe. Stewart states that in the bow of this canoe there was another platform made of small sticks covered with a mat on which was seated a man who was evidently a priest.

Sails (*ti'a, moena*) which were used on the smaller fishing craft and the large voyaging canoes were of the triangular, or lateen, type, and according to Linton were made of coconut leaf mats. It seems probable that pandanus mats were also used, particularly for voyages, on account of their greater durability. The mast was stepped in a hole (*puti'a*) in the bottom of the canoe and passed up through one of the forward seats (*pihao*).

The paddles (*hoe*) were made of rosewood. The handle ends were ornamented with a small *tiki* figure and the blades with designs similar to those used on bowls. The lower end of the paddle blade always terminated in a long rounded point. (See fig. 16, *c*.)

The bailers were made of *mi'o* or *temanu* wood and were "shaped like a sugar-scoop with the handle reversed—that is, projecting forward over the cavity" (20). (See fig. 16, *b*.)

### Ornamentation of Canoes

The main decoration of canoes was by means of carving and ornamental lashing. Bow and stern pieces were carved with the ornamental adzed designs (*tiki*) used on house posts (See fig 16, *d*). Some modern informants say that tattooing designs were also applied on these parts. This is true at least of canoe models. I believe with Mr. Linton that this type of carving was not used on the large canoes of ancient times. Ornamental lashings (*pu'u kaha*) the designs of which were taken from string figures, bound the supporting rods of the outrigger to the balancer and to the sideboards, and the sideboards to the hull, these lashings being made of sennit dyed red, yellow, and black. There was a conventional figure head, which was apparently always used at the forward end of the bow piece, consisting of a flattened conventionalized face. "There was a tendency to decorate the neck of the bow piece with figures carved in high relief or by the

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6



attachment of separate pieces." "A small *tiki* figure was sometimes but not always attached to the tip of the stern piece." (20.)

Temporary decoration consisted of coconut leaves, white cloth, and human hair; and "coconut fronds, which were commonly placed along the sides of the bow and stern platforms with their lower edges trailing in the water" (20). On the canoe with the two platforms described above, Stewart (26, p. 219) observed three green coconut leaves four or five feet high, which were fastened erect on the bow piece. It is probable that these were symbols of peace. Lines were run from the stern piece to corners of the steersman's platform and from these lines hung tufts of human hair and bits of white cloth (26, pp. 220-1). Stewart (26, p. 304) describes skulls as being lashed on each corner of the platform at the stern of a war canoe. Under the lashings that held the outside binding strip along the gunwale were put white feathers of the tropic bird, so that the plumed ends were visible—these gave the appearance and impression of speed and, doubtless, in the native mind were potent to make actual in the canoe this quality of the tropic bird.

## Crews

Modern informants say that the crews of large canoes numbered from one hundred and forty to one hundred and sixty men. Garcia ((14, p. 233), on the other hand, puts the number at forty or fifty. Legends commonly speak of a larger number and relate that, usually, in the Marquesas two hundred and eighty (*e hitu touho*—that is to say, seven forties) warriors constituted the crew of a war canoe or a voyaging canoe. The captain (*atu-iha*) had charge of the handling of both fishing and war canoes, and doubtless was usually, if not always, the steersman—his name indicating that he was a fisher by profession. The captain stood on the stern platform which was also the place of the chief. A large paddle (*kapekape, uki*) served for steering. In small canoes paddlers sat two on a seat, in large canoes four abreast, working in shifts, two by two. They paddled rythmically in unison (14, pp. 233-4).

While part of the crew was occupied in paddling, others were busy bailing.

## Ownership of Canoes

The information given by modern natives led me to believe that a large canoe was always the property of the chief of the tribe. Porter, however, gives interesting evidence of parts of a single canoe being owned by different individuals. He says (24, p. 101):

1: Handy E-5 (1920-1921)1923 OX6 Marquesas OX6



by four canoes for deep-sea fishing and various types and sizes for different kinds of fishing, grading down from these large nets to very small ones for hand fishing used with or without a handle. Lines for making nets and for fishing with a hook were made either of coconut fiber plaited, of fau bark, or of a combination of the two. Fine cord for fish lines was made of the fibers of the pineapple leaf. Hooks were made of pearl shell and of human bone. Simple hooks and also the complex type were used for bonito, bamboo being used for the rods. For spearing fish there was a lance with a single point (*mata ve'o ika*), and a lance with many barbed points (*mata va'u*) (8). Porter (24, p. 113) describes both bone and wood points on fishing harpoons.

One of my best informed native co-workers insisted that fishing with rods (*te ika hi*), hooks, and lines (*te ika hahe*), or with spears (*te ika ve'o*) and torches was never practiced in ancient times. I am convinced, however, from the other evidence that hooks and lines and spears were used anciently. Porter describing the implements in use at the time of his visit, says: "Those for fishing consist of the net, bone and wooden harpoons, the rod and line and fish-hooks formed of mother-of-pearl." As to torch-light fishing, it is probable that this was dependent on safety. It would always have been too dangerous in certain bays, where the fishers would have been to obvious bait for enemy canoes seeking victims for sacrifice.

Snares were used for catching eels and shrimps, and fish traps were made of fau bark, but of what form is unknown. Fish were poisoned in rock pools by the sea and in the region of the rock shelves within the bays. So far as I know, fish ponds were never constructed—there were few places in the Marquesas where it would have been possible. Torches for night fishing were made of bamboo, of sugar cane, and of a reedlike grass (*kakao*) (15, p. 54). Fish in pools by the sea were sometimes killed with small bows (*pana*) and bamboo darts, or with sling stones. An unusual method of fishing consisted in swimming, drawing a hook and line in tow. For the private fishing small individual canoes were used, but for the deep-sea fishing there were special craft, large and small. Porter (24), p. 102) describes fishing canoes as follows:

> Their fishing canoes are vessels of a larger and fuller construction, many of them being six feet in width, and of an equal depth. They are managed with paddles more resembling an oar, and are, in some measure, used as such, but in a perpendicular position, the fulcrum resting on the outriggers projecting from each side. With those they proceed to the small bays on the coast, where they fish with the scoop net, and with the hook and line. They have also smaller canoes, which are commonly nothing more than the hollow keels of the large ones, after the upper works are taken off; these are furnished with outriggers, and are used for fishing about the harbour.

4: Fernandez de Quiros T-5 (1595)1904
OX6 Marquesas OX6



with high hopes, many stories, and none for the good of the natives.

The Adelantado said to the Vicar and Chaplain that they were to chant the "*Te Deum laudamus*" with all the people on their knees, and that they should give thanks to God for the mercy of sighting land. This was done with great devotion.

On the following day, with doubt whether that island was inhabited, the ships were steered to the south of it, and very near the coast. From a point under a peaked hill towards the eastern end, there came out seventy small canoes, not all the same size, made of one piece of wood, with outriggers of cane on each side, after the manner of the gunwales of galleys, which reach to the water on which they press to prevent the canoe from capsizing, and all their paddles rowing. The least number they had in a canoe was three, the greatest ten, some swimming, and others hanging on—altogether, four hundred natives, almost white, and of very graceful shape, well-formed, robust, good legs and feet, hands with long fingers; good eyes, mouth, and teeth, and the same with the other features. Their skin was clear, showing them to be a strong and healthy race, and indeed robust. They all came naked, without any part covered; their faces and bodies in patterns of a blue colour, painted with fish and other patterns. Their hair was like that of women, very long and loose, some had it twisted, and they themselves gave it turns. Many of them were ruddy. They had beautiful youths who, for a people barbarous and naked, it was certainly pleasant to see; and they had much cause to praise their Creator.

Among them there was a boy, who appeared to be about ten years of age.[1] He came rowing in a canoe with

[1] Suarez de Figueroa says it was a girl.

4: Fernandez de Quiros T-5 (1595)1904
OX6 Marquesas OX6



778 Wanting to take other things, the natives interfered, saying they must not take anything, showing that they respected that house and the figures.

● 501 Outside the village they had some very long and well-made canoes of a single tree, with the form of a keel, bow, and stern, and with boards well fastened with ropes made from cocoa fibre. In each one there is room for thirty or forty natives as rowers; and they gave us to understand, when they were asked, that they went in these large canoes to other lands. They work with adzes, which they make of thick fish-bones and shells. They sharpen them with large pebbles, which they have for the purpose.

[321 324]

132 The temperature, health, vigour, and corpulence of these people tell what the climate must be under which they live. One suffers cold at night, but the sun does not cause much molestation by day. There were some showers, not heavy; dew was never felt, but very great dryness, so much so that wet things, when left out all night on the ground, were found quite dry in the morning. But we could not tell whether this was so all the year round.

231 They saw pigs, and fowls of Castille, and the fishery is certain wherever there is sea.

241 The trees which have been mentioned as being in the open space before the village yield a fruit which reaches to the size of a boy's head. Its colour, when it is ripe, is a clear green, and when unripe it is very green. The rind has crossed scales like a pineapple, its shape not quite round, being rather more narrow at the end than near the stem. From the stem grows a leaf-stalk reaching to the middle of the fruit, with a covering sheath. It has no core nor pips, nor anything uneatable except the skin, and that is thin. All the rest is a mass of pulp when ripe, not so much when green. They feed much upon it in all sorts of ways, and it is so wholesome that they call it white food. It is a good fruit and of much substance. The leaves of

[262]

5: Porter T-5 (1812-1814)1823
OX6 Marquesas OX6



with it; and in a short time we are induced to think that tattooing is as necessary an ornament for a native of those islands as clothing is for an European. 142 [304]

The young girls, which we had an opportunity of seeing, were handsome and well formed; their skins were remarkably soft and smooth, and their complexions no darker than many brunettes in America, celebrated for their beauty. Their modesty was more evident than that of the women of any place we had visited since leaving our own country; and if they suffered themselves (although with apparent timidity and reluctance) to be presented naked to strangers, may it not be in compliance with a custom, which taught them to sacrifice to hospitality all that is most estimable. [291]

The canoes are generally about forty feet in length, thirteen inches wide, and eighteen inches deep. They are formed of many pieces of the bread-fruit tree, cut into the form of planks, and sewed together with the fibres of the outside shell of the cocoa-nut. The seams are covered inside and out with strips of bamboo, sewed to the edge of each plank, to keep in a stuffing of oakum, made of the cocoa-nut shell also, which does not prevent them from leaking sufficiently to give constant employment to one or two persons to bail the water out. The keel consists of one piece, which runs through the whole length, is hollowed out in the form of a canoe, and seems to stiffen the whole vessel, and keep it straight. Three pieces of thin plank, placed in the manner of partitions, divide the interior into four parts, and perform the office of timbers to keep the vessel from separating or closing together. Out-riggers from the bow, middle and stern, with a long piece of light wood secured to the extremity of each, keep them from upsetting, which, from their narrowness, would frequently happen were it not for this contrivance. The ornamental part consists of a flat prow, which projects about two feet, and is rudely carved on the upper surface, to represent the head of some animal. Sometimes there is attached to it a small board, supported by a rudely carved figure of a man. From the stern is a slender projection of six or eight feet in length, and in the form of a sleigh runner, or the forepart of a Holland skate. Their paddles are very neatly made, of a hard black wood highly polished. Their handles are slender, the blades of an oval form, broadest toward the lower part, and terminating in a point like a hawk's bill. They were all without sails, and did not appear to be managed with much skill or dexterity. 501 ● [502]

5: Porter T-5 (1812-1814)1823
OX6 Marquesas OX6



They denied positively having refused him a passage, and 648
strengthened their assertions with fresh supplies.

Some time after this I sent a messenger to the Typees to inquire if they wished to be at peace with us, and to say that we were strongly disposed to be at peace with all the tribes on the island; but that this disposition did not proceed from fear, as I had strength enough to drive their united forces into the sea; but if they were disposed to be at peace, I was willing to meet them on the same terms as the other tribes, and only required an exchange of presents as a proof of their friendly disposition. In reply, they required to know why they should desire a friendship with us, or why they should bring us hogs and fruit? If I was strong enough, they knew I would come and take them; that my not doing so was an acknowledgment of my weakness; and that it was time enough to think of parting with them when they could no longer keep their valley.

I now inquired of Gattanewa the number of war canoes which he could equip and man; he informed me ten, and that each would carry about thirty men, and that the Happahs could equip an equal number of equal size; he told me it would be six days before they could be put together and got in readiness; but if I wished it, his people should set about it immediately. I directed them to do so, and dispatched a messenger to the Happahs directing them to prepare their war canoes to be in readiness to go to war with the Typees, and await my further orders. I gave them as well as the Taeehs to understand, that it was my intention to attack them both by sea and by land, and that I should send a large body of men in boats, and a ship to protect the landing of them and the war canoes, and that the remainder of the warriors of both tribes must proceed by land to attack them in the part where they were most assailable. I had hoped now to terrify the Typees by the formidable armament which was coming against them, and was glad to fix on some distant period for the commencement of hostilities, anxious to put them off as long as possible.

The war canoes of this island differ not much from those al- 501
ready described as belonging to the natives of the island of Oco- 422
hooga, or Jefferson's island. They are larger, more spendid, and highly ornamented, but the construction is the same, and like them they are furnished with outriggers. They are about fifty feet in length, two in width, and of a proportionate depth; they are formed of many pieces, and each piece, and indeed each paddle, has its separate proprietor. To one belongs the piece projecting from the stern, to another the part forming the bow. The pieces forming the sides belong to different persons, and when a canoe is taken to pieces, the whole is scattered throughout the

5: Porter T-5 (1812-1814)1823
OX6 Marquesas OX6



501 422 valley, and divided, perhaps, among twenty families. Each has the right of disposing of the part belonging to him, and when she is to be set up, every one brings his piece, with materials for securing it. The setting up a war canoe goes on with the same order and regularity as all their other operations. These canoes are owned only among the wealthy and respectable families, and are rarely used for the purposes of war or for pleasure, or when the chief persons of one tribe make a visit to another. In such cases they are richly ornamented with locks of human hair intermixed with bunches of gray beard, strung from the stem projection to the place raised for the steersman. These ornaments are in the greatest estimation among them, and a bunch of gray beard is in their view what the feathers of the ostrich, or heron, or the richest plumage would be in ours. The seat of the coxswain is highly ornamented with palm leaves and white cloth; he is gaily dressed and richly ornamented with plumes.
502 The chief is seated on an elevation in the middle of the canoe, and a person fancifully dressed in the bow, which has the additional ornaments of pearl-shells strung on cocoa-nut branches raised in the forepart of the canoe. She is worked altogether by paddles, and those who use them are placed, two on a seat, and give their strokes with great regularity, shouting occasionally to regulate the time and encourage one another. These vessels, when collected in a fleet and in motion, with all their rowers exerting themselves, have a splendid and warlike appearance. They were paraded repeatedly for my inspection, and in all the reviews they appeared greatly to pride themselves on the beauty and splendour of their men of war. They are not, however, so fleet as might be expected, as our whale boats could beat them with great ease.

201 226 Their fishing canoes are vessels of a larger and fuller construction, many of them being six feet in width, and of an equal depth. They are managed with paddles more resembling an oar, and are, in some measure, used as such, but in a perpendicular position, the fulcrum resting on the outriggers projecting from each side. With those they proceed to the small bays on the coast, where they fish with the scoop net, and with the hook and line. They have also smaller canoes, which
501 are commonly nothing more than the hollow keels of the large ones, after the upper works are taken off; these are furnished with outriggers, and are used for fishing about the harbour. The canoes used for the purpose of navigating from one island to another, a navigation very common, are similar in their construction to the larger kind of fishing canoes, and are secured two together by beams lashed across. These are called double canoes, and are furnished with a triangular sail made of a mat, simi-

5: Porter T-5 (1812-1814)1823
OX6 Marquesas OX6



lar to that generally called a shoulder-of-mutton sail, but placed in an inverted position, the hypothenuse forming the foot of the sail, to which is secured a boom. These are also worked during a calm with paddles, and appear capable of resisting the sea for a long time. The canoes formed for the sole purpose of going in search of new lands are of a still larger construction, and are rigged in the same manner. They use also occasionally a kind of catamaran, which they construct in a few minutes, and a kind of surf board, similar to that of the natives of the Sandwich Islands. These, however, scarcely deserve to be enumerated among their vessels, as they are used chiefly by the boys and girls, and are intended solely for paddling about the harbour.

## LETTER XV.

### *Madison's Island.—Typee War.*

The Taeehs, the Happahs, and Shouemes, now made fresh complaints of the insults and aggressions of the Typees; one tribe they had threatened to drive off the land; they had thrown stones at, and otherwise insulted individuals of the other tribes. The Taeehs and Happahs became very solicitous for war, and began to utter loud complaints that (as all the other tribes in the island had formed an alliance with me) they should be tolerated in their insolence, and excused from supplying us as the rest had done. The more distant had now discontinued bringing in their supplies, and the other tribes had fallen off considerably, complaining that we had nearly exhausted all their stock, while the Typees were enjoying abundance. Lead us to the Typees, said they, and we shall be able to furnish you from their valley; you have long threatened them; their insults have been great; you have promised to protect us against them, and yet permit them to offer violence to us; and while you have rendered every other tribe tributary to you, you permit them to triumph with impunity. Our canoes are in readiness, our warriors impatient, and for less provocations, had you not been here, we should have been engaged in hostilities. Let us punish those Typees; bring them on the same terms to which we have agreed, and the whole island will then be at peace, a thing hitherto unknown, but the advantages of which we can readily conceive. These were the sentiments expressed by the chiefs and warriors of the Taeehs and Happahs. Tavee seemed determineed to keep aloof from all quarrels; he was separated from us by the valley of the Typees, and they had it in their power to retort on him at pleasure. He and his people concluded it, therefore, the wisest to

6: Lisianasky T-5 (1803-1806) 1814 OX6 Marquesas OX6



674 young ones were not stolen, and then eaten to prevent detection. 1804. May.
I can easily credit this propensity to thieving, when I recollect, that the king's brother himself stole a piece of sugar from me, and, being accused of the crime, endeavoured, in the most barefaced manner, to persuade me that it was committed by a duck which I had given him, and which was then under his arm.

775 It is proved by facts that ignorance is the mother of superstition. It will therefore excite no astonishment that the inhabitants of Noocahiva should possess this quality in the highest degree. Every one here is persuaded, that the soul of a grandfather is transmitted by Nature into the body of his
[843] grandchildren; and that, if an unfruitful wife were to place herself under the corpse of her deceased grandfather, she would be
755 sure to become pregnant. It is also a current opinion, that there are individuals on the island who can cure the effects of the strongest poison, by simply rubbing the sides of the patient with their hands, which is supposed to make the poison come
776 out from under the ribs. But the belief in evil spirits has the
782 greatest weight, and is carried to the greatest absurdity amongst them; for it is imagined, that these spirits come sometimes into houses, and by whistling, and other more tremendous noises, demand pork and cava or ava, which, being placed in the middle of the room and covered, are immediately devoured by them. Surely these instances prove how insignificant, in its natural state, is the human understanding.

501 I saw none of the war-canoes of this place, and can therefore say nothing respecting them; but the common canoe is long and narrow, the bottom made out of a single tree, and fastened

6: Lisiansky T-5 (1803-1806) 1814 OX6 Marquesas OX6



● 501 1804. May. to the sides, by inserting a piece of small twine through numerous holes. The head resembles that of a galley, and to the stern a crooked piece of wood is fixed, through which runs the sheet of a triangular sail, made of matting. These narrow boats are well balanced by three long poles laid across, to the ends of which, on one side, is fastened a piece of wood.

312 The island of Noocahiva produces all the necessaries of life. It has excellent fresh water, and in such abundance, that it flows down in cascades from different elevations, greatly tending to beautify in many places the views of the coast The climate 132 is so salubrious that, by Roberts's account, many live here to the age of a hundred years. I saw myself the king's mother, who was about eighty, and did not yet think herself very old.

137 Having had but little leisure for minute inquiries respecting the vegetable kingdom in this part of the globe, I shall content myself with describing the few articles only that came within my observation.

## TREES.

*Toomoomey*, or Bread-fruit-tree. The branches of this tree spread out widely, and the leaves resemble those of the fig-tree, but are of a larger size, and of a deeper green. Its fruit is of an oblong figure, measuring lengthwise from five inches and a half to six inches and a half, and breadthwise from four to five inches; it is of a light green colour, but turns black after two or three days keeping. This useful tree, I was told, bears fruit here three times in the year. The first and the best crop, called by the natives mainooé, ripens about our January. The second, which

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



## CANOES

501 [177] For convenience in description, Marquesan canoes may be considered as of two main classes, modern forms, all of which show more or less European influence; and ancient, or genuine, Marquesan forms. The modern canoes are of two sorts, small fishing canoes and the form called by the natives *vaka poti* (literally, canoe boat), which is a hybrid of the European boat and the native canoe. Only two types of ancient canoe are remembered by the present natives, a small fishing canoe closely resembling the modern one, and a large war canoe. Double canoes, as described by informants, cannot be said to constitute a distinct type. Porter (49), who gives a very good account of the canoes used in Nuku Hiva at the time of his visit in 1813, describes a third type, all memory of which seems to have been lost. He also mentions a form of large double canoe used for long voyages.

### MODERN CANOES

#### FISHING CANOES

501 396 Small fishing canoes are still in constant use throughout the Marquesas. Their structure and method of manufacture may be described as follows:

[824] They range from twelve to eighteen feet in length with a beam of one foot to eighteen inches and a depth of about eighteen inches. The body of the canoe is hewn from a single log of breadfruit wood which is usually peeled and allowed to season for a time before shaping, but the making of some canoes begins as soon as the tree is felled. The shaping of the outside is completed before the excavation is begun. When the log has been roughly excavated with an ordinary steel axe, a short handled adz with a semicircular cutting edge is used to complete the dressing. The natives are remarkably expert in the use of these adzes, and the cuts left by them are as regular as though made by machinery, even on surfaces that will later be rubbed smooth. The outside of the canoe is rubbed down with sand paper after shaping until all the adz marks are obliterated. In the finished body, the sides are three-quarters of an inch to an inch thick, and the bottoms are from an inch to an inch and a half thick. The sides run parallel for most of the length, beginning to taper inward two to three feet from either end. The bow and stern are indistinguishable, the bottom curving up for about one-third the depth of the body and passing imperceptably into a straight cutwater. After the body is completed, two holes are bored through each side directly opposite about two inches below the gunwale edge and about three feet from the bow and from the stern. Round pieces of hard wood about three-quarters of an inch in diameter and seven inches long are then driven through these holes forming plugs which are used in the attachment of the outrigger. Two half-inch planks, four to six inches in width, are then placed outside the body, their lower edges resting upon the projecting plugs, and are gradually bent inward at either end, following the curve of the body, until they meet at the bow and stern. The ends of these planks are sawn diagonally to make the joint as tight as possible. These planks are nailed to the body of the canoe and to each other. Small triangular pieces of plank, resting upon the top of the dugout underbody, are usually inserted at bow and stern, forming a short deck at either end. Ordinary commercial hard pine is used for these and for the side planks. No caulking is used; the joints between the body and the sides planks are sealed with several coats of paint.

All canoes are provided with outriggers. The form now in use, which has replaced the original form throughout the group, is known to be the invention of a mulatto who settled in the valley of Tahuku, Hiva Oa, a few years ago. The rapid dissemination of this invention

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



indicates the speed with which new appliances of obvious value are accepted by the natives. The new outrigger is indirect, and consists of three elements, the float, the uprights, and the crosspieces. The float consists of a peeled log of fau wood four to five inches in diameter, slightly shorter than the canoe. This is usually sharpened at the forward end only, the cutting being done entirely from the lower side, but a few specimens were seen which had been sharpened at both ends, apparently with the idea of making the canoe completely reversible. The uprights, about two feet long, are usually made of small barrel staves. A triangular notch about two inches deep is cut in the upper end. Eight inches below this notch the uprights are pierced by a rectangular hole an inch and a half to two inches square. These uprights are permanently attached to the float. The unnotched ends of the staves are wedged into longitudinal slits near either end of the upper surface of the float. The crosspieces are peeled poles of fau or hard wood about eight feet long and three inches in diameter at the butt. Their outer ends are sharpened so that they will readily pass through the rectangular holes in the uprights.

The outrigger is assembled and attached as follows: The squared ends of the cross poles are fitted into the holes of the uprights, their joints projecting about two inches on the outer side. The whole outrigger is then placed on the right side of the canoe, the crosspieces extending across it on the line of the hard wood plugs, with their butts projecting a few inches beyond the left gunwale. One end of a light rope is then fastened to the projecting end of the front crosspiece, outside the upright. The rope is then carried over the top of the upright, through the notch, and along the crosspiece to the inner side of the right gunwale. It is then passed back and forth diagonally over the crosspiece and around the inside and outside ends of the plug until the crosspiece is held rigidly. The rope then runs along the crosspiece to the left gunwale, where the same lashing is repeated. Some slack is then left in the canoe, and the left end of the rear crosspiece is lashed, the rope passing from there to the right gunwale lashing the crosspiece there, and out along the crosspiece and over the end of the upright to the outer end of the crosspiece, where it is tied. Any rope left over is carried back along the crosspiece and coiled in the canoe.

An outrigger of this sort can be attached or removed in a few moments, and the single rope used to lash it is available for other purposes when not in use on the canoe. When a canoe is beached the owner usually removes the outrigger at once and stores it in a safe place, thus making the canoe useless and safeguarding it from theft.

Small fishing canoes of the type described are rarely used for trips of any length. They are not sailed but are commonly paddled by two men. One man sits on the stern crosspiece of the outrigger where it crosses the boat, while the other wedges himself between the thwarts amidships. Most of these canoes are completely reversible, and they are sometimes paddled with the outrigger on the left instead of the right. The narrowness of these craft, and their high center of gravity (for the paddlers sit practically on top of the canoe) make them very unstable, and in spite of the outrigger they frequently capsize. The natives right them by getting on the outrigger and forcing it down under the canoe and up the other side.

### VAKA POTI

The *vaka poti*—a craft that appears to be a local development—is an interesting example of the native adaptation of European ideas. It may be described as follows:

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501 396 [824] As the name indicates, the *vaka poti* is a hybrid of canoe and boat, and is larger and more seaworthy than the fishing canoe, being twenty to twenty-five feet long with a maximum beam of two to two and a half feet. A long strip of breadfruit or temanu wood, eight inches to a foot in width, about four inches thick and tapering to a point at both ends, serves the double purpose of keel and bottom. It is smoothly rounded on the outside and slightly hollowed along the center of its upper surface. This is probably an extreme modification of the dugout underbody of the old built up canoes. Longitudinal slots are cut in either end of this keel and into these two flat, slightly curving pieces of temanu wood are bolted. These serve as the stem and sternposts of the boat, and are identical in form. Short light ribs are then bolted to the keel along both edges, their short lower arms resting upon its upper surface. The sides of the boat are built up with thin planks of commercial lumber which are laid on with an overlap from above downward—that is, the boat is clinker built. These planks are carefully dressed along the points of contact to insure a tight joint, and are fastened into grooves in the sides of the stem and sternpost. The gunwales are finished with a narrow flat strip of wood. At either end of the boat, immediately below this strip, a triangular piece of plank is put in, decking the last two or three feet of the bow and stern. The boat is braced by three broad flat thwarts which also serve as seats. One of these thwarts is placed in the middle and the other two at either end, two to three feet within the edges of the end deckings. The forward thwart is pierced with a hole three or four inches in diameter which, with a corresponding block on the keel, serves to step a mast. These crafts are always provided with an outrigger similar in shape and attachment to that of the fishing canoe, but of proportionately greater size.

Alexander, who visited Nuku Hiva in 1899, saw a slightly different form of outrigger in use with the *vaka poti*. He says (2, p. 746): "From the gunwale to the outrigger float of these canoes is an average of 7 feet. The outrigger frame consists of five pieces of wood, namely, two poles or crosspieces seized across the gunwales 4½ feet apart, one forward and the other aft of center; two stanchions connecting crosspieces of the outrigger float, and a brace which is seized to crosspieces just outside the gunwale. That part of the crosspieces between the gunwales answers the purpose of thwarts, the upper side being hewn to a flat surface. The outboard ends are sized to the perpendicular pieces, or stanchions, the length of which is, as a rule, the distance from the gunwale to the water line. These pieces are sized to the top side of the float, the sizings extending all the way around the float, but done so neatly as to offer little resistance to the water. The crosspieces, float, and stanchions are braced with withes to prevent them from being twisted and thrown out of position by coming in contact with rocks. . . . The material used in sizing the outrigger frame together is coconut fiber twisted into a small line." [824]

[502] A *vaka poti* is normally handled by four men, one of whom sits in the stern and steers with a paddle while the other three row with short oars of ordinary European form. The bow and stern oars are placed on the side opposite the outrigger, the middle oar on the outrigger side, working within it.

Every craft of this sort is provided with a leg of mutton sail of canvas like that commonly used on ships' boats. When not in use the sail is stored under the short deck at one end of the boat, while the poles which serve as mast and boom are lashed along the crosspieces of the outrigger. The heavier of these poles, which is about nine feet long, serves as the mast. When the sail is to be hoisted, the mast is passed through loops of string tied along one edge of the sail, the loop nearest the masthead being firmly tied to the pole. Two light ropes are then attached to the masthead opposite each other and the mast is stepped, the butt passing through the hole in the forward thwart and resting in the hollowed block in the keel. The two ropes from the masthead are then fastened to the forward outrigger crosspiece just outside the gunwales of the canoe. A third rope is sometimes run from the masthead to the prow, but this is not common. The lighter pole serves as the boom and passes through the loops along the lower edge of the sail. The outermost loop is firmly tied to the boom, and a rope is attached to its outer end. The boom is then gradually thrust outboard until the sail is fully spread and only the inner end of the boom rests against the mast. This end simply rests against the mast and is not attached to it.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



*Vaka poti* are rarely if ever used for inter-island voyages as most of the villages possess whale boats, which are more suitable for such trips. The natives, however, make fairly long coasting voyages in the *vaka poti*. They keep as close in shore as possible, rowing along the edge of the breakers in the narrow belt of comparatively calm water caused by the backwash from the cliffs. Even when there are large bays along the route they prefer to skirt the shore rather than to cut straight across. This custom of lying close inshore no doubt accounts in part for the indifferent way in which the boats are sailed. When the wind is astern the sheet is paid out on the side away from the outrigger, and as there is no way of reefing in case of a strong wind it is necessary for the occupants of the canoe to lean far out on the outrigger side or even climb out on the outrigger frame to keep the boat from capsizing. When the wind is on the port quarter the sheet is paid out on the outrigger side, but it is dangerous to sail this way as a sudden puff may drive the outrigger under and capsize the boat. When the wind is abeam the natives lower sail and row out against it for some distance, then spread sail and come in at a long slant with the wind on the quarter, repeating the maneuver whenever they get too close to the coast. They do not seem to understand tacking, and never sail except with a following wind.

## ANCIENT CANOES

### THE DUGOUT

Two ancient types of canoe are remembered by the natives, a small fishing canoe, and a built up war canoe. The small canoe is said to have been a simple dugout, identical with the modern fishing canoes already described except that it lacked the plank gunwales and had an outrigger of the ancient form (p. 309). Porter (49), who mentions these canoes, says that they were "commonly nothing more than the hollowed keels of the large ones after the upper works have been taken off." They appear to have been used only around the harbors, all longer voyages being made in canoes of the built up type.

### BUILT UP CANOES

Large built up canoes have been obsolete for many years, as the Marquesans were quick to see the superiority of the European small craft and soon learned to imitate them. Even in 1838 Du Petit-Thouars (48, p. 348) says that the ancient canoes had been largely replaced by whale boats which the natives obtained from passing ships. Small built up canoes have, however, continued in use until comparatively recent times and a seaworthy example is still to be seen on the island of Fatu Hiva. The form of these smaller craft is well remembered by many living persons and from their descriptions, the numerous early

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501 accounts and the fragmentary examples surviving in various parts of the group, it is possible accurately to reproduce the type.

501 824 Four species of wood were used for the large canoes *mio* (*Thespesia populnea*), temanu (*Calophyllum inophyllum*), breadfruit, and hutu (*Barringtonia speciosa*). The hutu was considered least desirable. *Mio* was rarely used, as large trees of this species were rare and the wood was in great demand for other purposes. Breadfruit wood was usually used for the smaller and poorer boats, while the best craft were made of temanu. Even at the present time there is some very large timber in the Marquesas (one temanu tree over ten feet in diameter was seen) but there is no native tree which produces a long straight stick at all comparable to the New Zealand kauri, and in very large canoes it was usually necessary to make the underbody in two or more sections which were dovetailed together.

396 313 322 Before the introduction of metal very large trees were felled with fire, but the shaping and hollowing appears to have been done entirely with tools. From a chant collected by Handy (personal communication) the tree appears to have been stripped of its bark and possibly of its branches before felling. The shaping was begun as soon as the tree was felled, the green wood being tougher and more easily worked. The tools used were stone adzes of various sorts, chisels and rubbing stones. (See chapter on Stone Artifacts.)

396 501 The building of large canoes was in the hands of *tuhuna* (skilled workmen) who merely supervised the work, leaving the actual labor to the friends and relatives of the owner. According to informants in Pua Ma'u, Hiva Oa, four hundred men (probably an exaggeration), under the direction of four *tuhuna*, were employed upon the last war canoe built there. The work was all done at the place where the tree had been felled, which in this case was high up the valley. Here a large decorated house was built for the workmen, who lived there with the directing *tuhuna* and were fed by the chief for whom the canoe was made. Twenty men are said to have been required to gather the food. The place was tapu to women and to all natives from other valleys. According to an informant from another valley some famous warrior slept in the unfinished canoe body every night in order that his mana might strengthen the wood and keep it from splitting. The completed canoe was carried down to the beach, probably in sections, and launched. [For an account of the ceremonies attending canoe building and launching see Handy (32)]. In Pua Ma'u the war canoes were kept assembled in special houses at the beach. These houses were undecorated and appear to have had no ceremonial significance beyond the fact that they were tapu to women. Each war canoe was named, a new canoe was given the name of a former one

396 501 552

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



which had been worn out or damaged. The names of the Pua Ma'u canoes were Vaimakamaka, the largest and most important, Vaioto, Taipehe and Meaupiau.

The canoe normally consisted of nine parts, the underbody, bow piece, stern piece, two side planks, and four strips used to cover the side seams. Certain other parts were occasionally added. Each of the large sections was usually hewn from a single piece of wood, while the strips were made of bamboo.

The underbody of one large canoe and part of a second underbody, which had been made in two pieces, were seen in the valley of Hakaui, Nuku Hiva. The history of these objects had apparently been forgotten by the Hakaui natives, but according to Atu Ona informants one of the underbodies belonged to a canoe called Mo'ote which was made in that valley by a *tuhuna* named Kaneautia. This canoe was sent to the chief of Hakaui by a chief of Atu Ona in exchange for *enamoa*, a yellow paint or dye used for anointing the body, prepared in Nuku Hiva by a secret process. The debris of a great temanu tree from which this canoe is said to have been made is still to be seen in Atu Ona.

Hakaui informants said that the two underbodies had belonged to separate craft, not to a single double canoe. On the other hand Christian (10, p. 180) mentions two old canoes in this valley which, from their location, seem to be the same as those here referred to and gives a photograph of a large double canoe, unquestionably Marquesan, which he implies belongs with the reference. In this photograph each of the canoes appears to be complete in itself while the attachment consists of three cross poles, easily removable. It seems probable, therefore, that these canoes were used both singly and together.

A study of the complete underbody—which had been exposed to the weather and was much rotted and warped—brought out the following particulars:

It was 40 feet, 6 inches in length, with a maximum central width of 4 feet, which tapered to 2 feet, 6 inches at the ends. The original depth could not be accurately determined. The two ends of this underbody were identical.

The section of an underbody was much better preserved, having been stored under an overhanging cliff which protected it from the weather. If the underbody of which this had formed a part was similar to the complete specimen it must have been over 60 feet in length. Some old canoe models, which appear to be very accurate, clearly show that the two ends of underbodies were not always the same, the forward end often being made much broader and deeper to facilitate the firm attachment of the bow piece. The extreme shallowness and narrowness of the outer end of the section proves that it was the stern, and if we assume that the whole underbody was of the broad bowed type it is possible that it was not more than 40 to 45 feet in length. The dimensions of the section were as follows: Length 34 feet, 11 inches; maximum width (at a point 4 feet from the inner end of the section) 3 feet, 4 inches; width at stern, 1 foot, 6 inches; maximum depth (outside) 1 foot, 9 inches; depth at tip of stern 4½ inches. The walls were 1½ inches thick at the upper edge, increasing gradually to 2¼ inches in the center of the bottom. The cavity of the underbody had, in cross section, the form of a rectangle with rounded corners. The middle of the canoe was flat bottomed, becoming gradually more rounded toward the stern.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



396
●501 The rim of the underbody was flat and straight throughout its length, except for the last six feet of the stern where the walls of the underbody were thickened to form a longitudinal ridge about two inches below the upper edge. (See Pl. XLII, *A*.) The lower part of this ridge curved smoothly into the contour of the bottom, while the upper part ran back in a flat bevel at an angle of about 40 degrees to the line of the outer edge of the flat rim. The bow and stern of all underbodies appear to have been finished in this way. The tip of the underbody was cut squarely across, and the outside was flat and vertical. The rim was somewhat broader here than along the sides and had, in the center of its interior surface, a broad, rounded point, left at the time of its excavation. This feature is shown in small canoe models, and both the bows and stern of underbodies were probably finished in this way. The projection corresponded to a similar projection on the under surface of the stern and bow pieces, and no doubt helped to strengthen and make rigid their juncture with the underbody.

The inner end of the canoe section observed at Hakaui was especially interesting as it showed the method of finishing a joint. The bottom was cut squarely across, and had no holes for lashings. The sides were cut back for a distance of two feet, the lower edge of the cut sloping upward gradually until its perpendicular inner end was only eight inches high. The surfaces of the side cuts were beveled, running to a thin edge on the inside, and were pierced with triangular holes for lashings. (See Pl. XLII, *B*.)

A row of similar holes was pierced through either side of the underbody about an inch below the rim. There were no holes at the ends. The lashing holes were an inch and a half in width and approximately an inch in depth, the base of the triangle being upward, and were placed at intervals of five to six inches.

Along each side of the section there was a row of three small projections which had been left at the time the canoe was hollowed out. These projections were six inches wide and five and a half inches high, the upper edges were two inches below the rim of the underbody. They had been carved into the form of squat human figures with disproportionately large heads, but the details had been practically obliterated. The projections were arranged in pairs, facing each other; the interval between pairs was 9 feet. 11 inches. The natives could give no information as to their purpose, but it seems certain that they served as supports for thwarts or seats. The complete underbody had no projections of this sort and these projections do not appear in any of the models studied.

[24] Both underbodies were made of temanu wood and had been carefully rubbed down inside and out, obliterating all tool marks and giving the surface a finish as smooth as that of an ordinary bowl.

### The Bow Piece

So far as known no bow pieces of Marquesan built up canoes have survived but excellent descriptions which check up with the accounts of early voyagers and the old canoe models were obtained from informants.

In a canoe with a forty-foot underbody the bow piece would be about fourteen feet long. Its shape (difficult to describe) can be seen from the accompanying photograph of a section of an old and apparently very accurate canoe model (Pl. XLIII, *A*). For the sake of convenience in description the bow piece may be divided into three parts, the deck, the neck and the figurehead. The deck was the rearmost section, which was enclosed between the ends of the side planks and bounded in front by a transverse flange, the breakwater, which kept head seas from entering the canoe. The deck of the bow piece was of the same width as the underbody, with a flat upper surface and vertical sides. The under surface was deeply hollowed, the lower edges being of the same width as the sides of the underbody upon which they rested. Triangular lashing holes were pierced through the sides a short distance above the lower edge,

7. Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



while two other holes, one on either side, were pierced through the angle formed by the top and sides about half-way between the breakwater and rear end of the deck. The upper lashing holes, which served for the attachment of the ends of the side planks, did not pierce the cavity of the bow piece.

The neck, or portion lying between the breakwater and the figurehead, was two to three times the length of the deck. Its upper surface was flat, and was the same width as the deck immediately in front of the breakwater, tapering gradually toward the forward end. Its lower surface was hollowed for about one-half its length, the outer end of the excavation being cut to leave a semicircular projection like that already mentioned in the description of the ends of canoe underbodies. Beyond the end of the excavation a heavy flange projected downward, its lower edge being flush with the bottom of the end of the underbody when the bow piece was in position. On the outer side this flange curved up smoothly to the base of the figurehead. The lower edges of the sides of the excavated portion fitted accurately to those of the underbody, and were pierced with lashing poles. Above the edge, however, the sides sloped inward, the flat upper surface of the neck projecting beyond them on either side in a longitudinal flange.

The angle which the neck formed with the body of the canoe seems to have varied considerably. In the specimen photographed the neck is practically parallel to the upper edge of the underbody, and the early accounts and pictures would seem to indicate that this was usual. According to informants, however, it curved upward sharply beyond the end of the underbody, and all the recent canoe models show this feature in more or less exaggerated form. In the double canoe shown by Christian (10, p. 180), the neck of the bow piece of one canoe is of the form already described and curves upward at only a slight angle, while the neck of the other canoe curves up much more abruptly. In the second specimen the upper surface of the neck does not project over the sides, but curves down into them smoothly, as in the normal stern pieces.

The form of the figurehead and its relation to the neck can best be described by comparing it to a long handled shovel laid back up, the neck corresponding to the handle and the figurehead to the blade. The base of the figurehead projected out sharply from the neck on either side, while the forward end was semicircular or was bluntly pointed. The upper surface was convex, the point of greatest thickness being at the middle of the rear end. It was carved into a single, large, flat face, chin forward. The convention was the usual one except that the broad mouth was crescent shaped, and the ears were represented by thin semicircular flanges which projected from either side of the head just beyond its juncture with the neck.

### The Stern Piece

Two forms of stern piece were employed in the Marquesan built up canoe. The one shown in the accompanying picture (Pl. XLII, *E*) is apparently the commoner type. For the sake of convenience in description this form may be divided into three parts—the body, deck and tail.

The body of the stern piece was that part which rested upon the underbody of the canoe. It formed a third to a half of the total length of the stern piece, supporting the deck and tapering off into the tail at the rear. The lower surface of the body was deeply hollowed, while the outer sides curved inward gradually meeting in a distinct ridge along the median line of the upper surface. The lower edges were cut to conform accurately to the upper edges of the stern of the underbody, and were pierced with holes for lashings. The rear end of the body terminated in a heavy, downward projecting flange which rested against the stern of the underbody and was identical in form and arrangement with the corresponding flange on the bow piece.

The deck, although hewn in a single piece with the body, had the appearance of simply resting upon it, its sides and rear edge projecting beyond the sides of the body. Its upper

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



396 501 surface was flat and almost rectangular, curving up into a transverse flange at the rear. At the forward edge of the body there was a narrow vertical flange, extending from its lower edge to the deck, which served to make a close joint between the stern piece and the side planks. The edges of the deck were pierced with two vertical lashing holes which served for the attachment of the ends of the side planks. The inner end of the stern piece was sometimes considerably thicker than that of the bow piece, raising the level of the stern deck. When such was the case the height of the transverse flange at the rear end of the deck, really a stern breakwater, was less than that of the bow breakwater. The upper edges of the two breakwaters were always at the same level.

In the two oldest canoe models studied, a long oval projection with an almost circular depression in its upper surface extended from the center of the stern breakwater over the body. The only genuine stern piece seen did not show this feature and it is not found in the more recent canoe models. The purpose of the projection was not learned.

The stern piece narrowed rapidly to form the tail, a long flat projection, like a thick plank with the edge up, which rose from the body of the stern piece at an angle of twenty to thirty degrees. It might be either straight or slightly curved, and was pierced near the outer end and along its length with two or more holes, or slots, which served for the attachment of various ornaments.

The stern piece of one of the large canoes in Hakaui referred to (p. 303), is said to have been eighteen feet long and of the type just described.

In the second form of stern piece (Pl. XLII, *C*) the deck and body parts were of the same form, but the rear end fitted down closely upon the stern of the underbody, without overlapping or projecting beyond it. Informants insisted that all canoes had the high tail piece, but were uncertain how it was attached to this form of stern. Fleurieu (23, pp. 131 to 132) says: "The stern is made of two planks four inches high, placed on edge and rising in the form of an elongated and flattened S." Stewart, an unusually trustworthy observer says: "From the keel on each side a light round timber extended, curving gradually upward like the runners in the front of a sleigh, and terminating in a broad flattened blade, six to eight feet above the water." (59, p. 244.) It seems probable, therefore, that in stern pieces of the sort just described the tail was made in two pieces which were lashed one on either side of the canoe.

### Side Planks

The side plank of a Marquesan built up canoe was a flat piece of wood of the same thickness as the rim of the underbody and a foot to a foot and a half in width (Pl. XLII, *G*).

The upper edge was hewn into a narrow gunwale, the inside of which was flush with the surface of the plank, while the outside projected as a narrow flange. The lower half to two-thirds of the plank was cut away at either end in a long curve, so that while the length of the upper edge was equal to the distance between the outer surfaces of the breakwaters when the bow and stern pieces were in position, the length of the lower edge was only slightly greater than the distance between the inner ends of the bow and stern pieces. At the points of contact of the side planks with the end pieces, the inner surface of the planks was cut away to insure a tight joint, the cutting being deepest at the lower edge and becoming gradually shallower toward the top. As a result of this, the upper part of the side plank was forced out somewhat when it was in position so that the whole plank formed a slight angle with the sides of the underbody.

A series of triangular lashing holes, corresponding to those of the underbody in size and position but with the base down, were pierced through the side planks a short distance above its lower edge. Additional holes for the outrigger lashings were made through the upper edge immediately below the gunwale. There were usually three of these, the two outer holes being placed a short distance within the points of contact of the side plank with the bow and

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



stern pieces, while the third was midway between them. Other lashing holes were pierced through the lower edges of the projecting ends of the side plank and served to attach it to the bow and stern pieces, while still others were made under the gunwale at either end to serve for the attachment of bow and stern platforms. Where a supplementary breakwater was used, holes for its attachment were pierced through the forward ends of the side planks near their outer edges.

396
501

### The Strips

Four strips were used to cover the seams between the underbody and the side planks, bow and stern pieces.

The strips were of unequal length, the two outside strips extending the full length of the underbody while the inside strips only covered the space between the inner ends of the bow and stern pieces. The upper edges of the inside strips were cut away for a short distance at either end so as to form a close joint with the lower corners of the bow and stern pieces. The strips were made either of soft wood or bamboo and were an inch to an inch and a half in width. When bamboo was used a stalk was split lengthwise and the divisions at the joints cut out. The wooden strips were rounded on the outside and hollowed longitudinally on the inner surface. On long canoes the strips were made in several sections, but there seems to have been no definite order in the arrangement of these. Although the edges of the strips were cut to fit the sides of the canoe as accurately as possible, their purpose appears to have been to protect the pad used between the underbody and the upper sections rather than to make the seam watertight.

### Other Canoe Parts

Other elements were sometimes incorporated into the built up canoes.

A supplementary breakwater was in common use (Pl. XLII, *F*), consisting of a thin plank, in the form of a broad flat crescent with stubby points, which was sometimes attached to the upper edge of the bow breakwater. The lower edge of this plank rested upon the top of the breakwater and was accurately fitted to it, while the sides projected beyond the sides of the bow piece. It was attached by lashings to the center of the breakwater and at the ends of the side planks.

A second feature, of greater ethnological interest, was the use of bulkheads. No information was obtained from the natives in regard to bulkheads, but they are shown in certain canoe models and are mentioned by Porter in his description of the Ua Huka canoes. He says: "Three pieces of thin plank, placed in the manner of partitions, divide the interior into four parts and perform the office of timbers to keep the vessel from separating or closing." (49, p. 79.) Judging from the models, these planks were cut to fit accurately the interior of the canoe, being notched on either side to accommodate the strip covering the side seam. The tops were flush with gunwales to which, in one model, they were fastened by single lashings near the top on either side.

It is probable that thwarts designed simply to strengthen the canoe were not used, but the war canoes had seats for paddlers. According to informants the seats were flat planks resting upon the top of the inside strips. Large canoes might have as many as ten seats.

## ASSEMBLING THE CANOE

In some of the larger valleys the canoes were kept in special houses on the beach, and were probably left assembled at all times. According to informants in other places, canoes were usually taken to pieces as soon as they were beached and the parts carried up into the valley. A highly probable explanation of this

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



396 practise, which involved much unnecessary labor, is given by Porter (*49*), pp. 101-
● 501 102). He says:

[422] Each piece, and indeed each paddle has its separate proprietor. To one belongs the piece projecting from the stern, to another the part forming the bow. The pieces forming the sides belong to different persons and when a canoe is taken to pieces, the whole is scattered throughout the valley and divided, perhaps, among twenty families. Each has the right of disposing of the part belonging to him, and when it is to be set up each brings his piece with materials for securing it. The setting up of a war canoe goes on with the same order and regularity as all their other operations.

Mention of this curious system of ownership is also made by Desgraz (*15*, pp. 281-282) but as his book appears to be a little more than a compilation from earlier sources, this can hardly be taken as a verification.

It seems certain that there must have been a definite order in which the various sections were placed in position, but no exact information was obtained on this point. The structure of the canoes, however, partially indicates the following sequence:

The first step must have been to arrange the pads which took the place of caulking between structures or sections. There were four of these, two being placed along the sides of the underbody and one at either end. The side pads consisted of two thick flat ropes, of the same length as the underbody, each of which was plaited from three strands of coconut husk fiber. Cellular tissue of the husk was left adhering to this fiber, probably with the idea of filling the interstices and making the finished seam more nearly water tight. These ropes were laid along either edge of the underbody, being held in position by continuous bark strings which fastened them to the underbody at each lashing hole. The end pads were made from a number of the fiberous leaf sheaths of the coconut which were spread out flat with their upper ends resting on the top of the underbody and their lower ends bending down over its flat vertical bow and stern. They do not seem to have been attached to the underbody in any way.

The next step was to place the bow and stern pieces in position, and then the side planks. Whether the bow and stern pieces were attached before the side planks were put on is uncertain, but it seems probable that the whole superstructure was lashed to the underbody in a single continuous operation. In the models the lashing of each side is done with a single continuous line, beginning at the bow.

[284] The lashings were of broad three-plait coconut fiber cord considerably heavier than that used for house lashings. This was passed several times through the upper and lower lashing holes, outside of the strips, the outer side of the lashing being flat, the full width of the hole, and only one cord thick. According to one informant a large wooden needle, with the point barbed on one side was used to facilitate passing the cord in and out. (See section on Miscellaneous Tools.) The upper ends of the side planks were attached to the bow and stern pieces by small lashings, each of a single piece of cord tied on the inside. The inside lashings are said to have been ornamented on some canoes with designs derived from string figures.

## CAULKING

501
396 The lashings of the underbody and superstructure did not completely fill the
314 triangular holes provided for them, and the openings were caulked with pieces of
[237] coconut husk wadded up and beaten in with a wooden mallet and pointed stick. (See section on Miscellaneous Tools.) The seams at the ends of the canoe were calked with feathers, beaten in. [48]

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501 396 [314]

with feathers, beaten in. Langsdorff (38, p. 173) says that the seams were covered with the gum of the breadfruit tree, but this was not mentioned by informants or by any other early visitor. All accounts agree that the craft leaked so badly that one or two men were kept constantly employed bailing.

## THE OUTRIGGER

All canoes, when not fastened together in pairs, were provided with outriggers. Quiros (50, p. 28) says that they had "outriggers of cane on either side, after the manner of the gunwales of galleys." Porter (49, p. 102) also mentions the use of double outriggers in connection with large canoes differing somewhat from the type now under discussion. Canoes appear, however, to have been normally fitted with a single outrigger on the right side.

This outrigger was of indirect type, consisting of crosspieces, uprights and a float. In the smaller craft two crosspieces only were used, in the larger canoes there were three, the third being in the middle. These crosspieces passed over the canoe, their right ends projecting beyond it, and were lashed firmly to the side planks by cords passed through holes in the upper edges of the side planks.

Each of the uprights consisted of four or six small sticks or splints. When four sticks were used they were placed two on either side of the crosspiece, and the lower ends of each pair rested together, the upper ends being some inches apart so that they formed a V. Each of these V's in turn sloped outward from the crosspieces; their attachments to the float were a foot or more apart. Informants say that this form of upright, although much more difficult to make than the modern one, was superior to it. In landing through a heavy surf the forward end of the float often strikes bottom, and with the modern heavy upright the canoe is turned end over end. When the old upright was used the thin sticks of which it was composed broke easily, and the canoe would land without capsizing. The lower ends of the uprights were wedged into slots in the upper surface of the float, which consisted of a hibiscus log sharpened at the forward end.

## CANOE PLATFORMS

According to old accounts the large war canoes were provided with platforms at bow and stern, while Porter (49, p. 101) mentions an additional central platform on which the chief sat. The use of such platforms is only vaguely remembered by the natives and these platforms are not shown in the newer models. Stewart (59, p. 244) says that the platform was made of small sticks and covered with a mat, and that the stern platform was considerably higher than the one in the bow. In two old models the stern platforms are made as follows:

Two rather large peeled sticks were laid across the canoe, the inner stick being close behind the forward end of the stern piece while the outer was just in front of the breakwater. Two other poles were then laid across the ends of these, lengthwise of the canoe, and the whole lashed to the side planks with bark rope passed through holes in the canoe. The rear ends of the second pair of poles projected slightly beyond the stern breakwater. Two more cross poles were laid on the ends of these, above which two very long poles were placed lengthwise, their tips projecting back almost to the tip of the upward curving tail. The four upper poles were then lashed to the frame formed by the four lower ones. The bow platform was built on the same principle except that the tops of the second set of poles were flush with

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



396 those of the supplementary breakwater, and two long poles like those of the stern platform
●501 were lashed to these, one on each side. The tips of these poles projected forward almost to the figure head. In rear platforms the top of the cribwork was probably floored in some way. The platform was quite small, and according to the early accounts, was occupied by only one man.

## DECORATION OF CANOES

501 Canoe decorations fall at once into two classes—carvings and decorations
591 incorporated into the canoe and temporary decorations. The use of ornamental lashings has been mentioned, but no details are available.

All informants agree that the bow and stern pieces, and less commonly the side planks, of large canoes were carved. The figurehead, at the forward end of the bow piece, consisted of single large flat tiki face but the designs used on the other parts of the canoe are said to have been either angular-geometric, like those used on house posts, or curvilinear like those used in tattooing. The bow and stern pieces of most canoe models are decorated with angular-geometric designs and these appear to have been more commonly employed on the actual
501 canoes. There was a tendency also to decorate the neck of the bow piece with
532 figures carved in high relief or by the attachment of separate pieces. One old canoe model (Pl. XLIII, *A*) has, down the center of the bow, two recumbent figures placed face up, with their feet together and their heads touching the front of the breakwater and the back of the figure head. They are carved in one piece with the bow, but are in almost full round, the only points of attachment being the tops of their heads and their buttocks. The bow piece of a second old model has down the center of the top a flat longitudinal ridge to which is lashed a thin vertical plank pierced with two large holes. The rear edge and bottom of this plank form a right angle and the forward edge is curved. In the picture of a Marquesan canoe given by Cook (14, p. 307) the bow has along its center three projections, evidently thin planks two or three feet long, which are recurved at the upper end, like pruning hooks, and have on the back two points. In front of these points large triangular holes are pierced through the plank. Porter (49, p. 79) says that some canoes of Ua Huka had on the bow a small board supported by a rudely carved figure of a man. The more recent models show no trace of these neck decorations. They seem to have been replaced by temporary decorations at an early time.

A small tiki figure was attached to the tip of some of the stern pieces. Stewart (59, p. 244) says that between the two sticks forming the tail of the canoe "a rude image of a god was suspended in a reclining posture." This is verified by a canoe model which has attached to the tip of the stern piece two broad wooden blades which project backward, diverging slightly. Between these blades there is a small tiki figure, facing the canoe in a nearly horizontal position. In Pua Ma'u a small full figure tiki was carved on the top of the tail piece.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



The longitudinal strips covering the outside seams of the canoe were painted black and ornamented at each lashing by tufts of white feathers of the *tevake* bird. The feathers were placed on the stern side of each lashing, and were held in place by the two or three rearmost loops, their inner ends resting directly upon the strip.

The temporary decorations in most general use consisted of coconut fronds which were placed along the sides of the bow and stern platforms with their lower edges trailing in the water. According to one informant they were also placed along the sides of the canoe, but no mention of this is made by early writers. Stewart (59, p. 244) says that in the large canoe seen by him "between the figure head and the bow, three green coconut leaves, four or five feet high, were fastened erectly." Porter (49, p. 102) says: "The seat of the coxswain is highly ornamented with palm leaves and white cloth."

Porter (op. cit.) says that the bow was ornamented with pearl shells strung on coconut branches.

Two cords were run from the rear corners of the stern platform to the tip of the stern piece, these cords being decorated with tufts of human hair and *pava-hina* (ornaments made from white beards). These cords are still present in one of the old models, attached to the ends of long poles projecting from the stern platform. It seems probable that long tapa streamers were also attached to the stern piece, as several of the models are decorated in this way.

Stewart (59, p. 327) says: "A skull was lashed on each corner of the platform elevated at the stern." According to an old informant, the bodies of any enemies killed during a raid were laid across the neck of the bow piece during the homeward voyage.

## HANDLING OF THE CANOES

According to informants the large war canoes were never sailed, but small canoes and double canoes, made from two craft of this type lashed together, were sometimes sailed. The paddlers sat two on a seat and paddled rhythmically, usually chanting in time to the strokes. The steersman sat on the raised stern platform, using a long paddle of ordinary Marquesan form. According to one informant there were two steersmen, one on either side. Porter (49, p. 102) says of these craft: "They are not so fleet as might be expected, as our whale boats could beat them with great ease," and all the early accounts agree that they were rather poorly handled.

## SPECIAL TYPES OF CANOES

Mention has been made of double canoes, but according to all the information obtained by the author these were simply canoes of the built up type which

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501 were temporarily fastened in pairs. They were fastened together by heavy poles, corresponding in position to the crosspieces of the outrigger. The space between the canoes was covered with a temporary platform. In some stories mention is made of a railing around this platform. (Handy, personal correspondence.) Double canoes of this sort were used for inter-island trips and for long fishing trips, when the crew expected to be away for several days. Double canoes, made from [724] fishing canoes, are said to have accompanied the war canoes on long raids to carry supplies.

Porter (49, pp. 102-103) mentions still another type of craft which is so remarkable that it seems best to give the quotation in full. He says:

> Their fishing canoes are vessels of a larger and fuller construction, many of them being six feet in width and of an equal depth. They are managed with paddles more resembling an oar, and are, in some measure, used as such, but in a perpendicular position, the fulcrum resting on the outriggers projecting from each side. With these they proceed to the small bays on the coast, where they fish with the scoop net and with the hook and line. . . . The canoes used for the purpose of navigating from one island to another, a navigation very common, are similar in their construction to the larger kind of fishing canoes, and are secured two together by beams lashed across. These are called double canoes and are furnished with a triangular sail made of mat. . . . These are also worked during a calm with paddles and appear capable of resisting the sea for a long time. The canoes formed for the sole purpose of going in search of new lands are of a still larger construction, and are rigged in the same manner.

No other author mentions craft of this large type but the quotation just given is preceded by a detailed and accurate account of the built up canoes and, except for a tendency to exaggerate dimensions, Porter's accounts of material culture seem to be thoroughly trustworthy. It seems certain that at the time of his visit the Marquesans had some vessel of much larger size than the built up canoe and differing from it in construction.

Informants made no mention of craft of this sort, and the type probably became extinct at an early time. Even at the time of Porter's visit the natives had had considerable contact with Europeans, and there were white sailors settled among them. They are, as a race, quick to see the advantages of mechanical improvements, and the rapid adoption of the present type of outrigger shows the speed with which a new idea may spread among them. They had undoubtedly seen many ships' boats, and it is quite possible that they had already developed a hybrid form intended to embody the advantages of both ships' boat and canoe. We have seen that in 1838, twenty-five years after Porter's visit, whale boats had supplanted most of the large canoes, so that the life of the new type would have been short.

On the other hand, Porter specifically says that the large double canoes were of this type, a strong evidence that it was pre-European. Moreover, his

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



brief description of the manner of propulsion applies perfectly to the Tongan method of sculling large craft. It would be practically impossible to build a boat six feet wide and of the same depth on the lines of the built up canoes already described, and it seems certain that these boats were made either of planks or of many pieces. Plank canoes were used in the Society and Tuamoto groups and the Marquesans could hardly have been ignorant of this form of boat. 501 ●

In a legend of the migration of one of the tribes of Hiva Oa, which was driven out by its neighbors and went to seek new land, it is stated that they departed on large bamboo rafts. The tribe in question lived on the plateau and were said to have used these craft because they had no wood suitable for canoes. No details as to the construction could be obtained. [824]

Porter (49, p. 103) says:

> "[The natives] use also occasionally a kind of catamaran, which they construct in a few minutes, and a kind of surf board. . . . These, however, scarcely deserve to be enumerated among their vessels, as they are used chiefly by the boys and girls, and are intended solely for paddling about the harbor."

## SAILS

The aboriginal type of sail became obsolete at an early date and it is doubtful whether any of the living natives have seen a genuine ancient sail. Informants insisted that they were like those in use at the present time except that the boom sloped upward instead of being horizontal and that the sail itself was made of coconut mats instead of canvas (pandanus mats were tapu for sails). This agrees perfectly with the brief mention of Porter and the picture given by Cook. Porter (49, pp. 102-103) says: 501 205 [824]

> Double canoes ". . . are furnished with a triangular sail made of mat, similar to that called a shoulder-of-mutton sail but placed in an inverted position, the hypothenuse forming the foot of the sail, to which is secured a boom.

The drawing published by Cook (14, p. 307) shows a single canoe provided with a mast of rough timber and a triangular sail of matting along the lower edge of which there is a boom also of rough timber. The boom is set at an angle of about forty-five degrees, the apex of the triangular sail being at the juncture of the boom and mast. The upper edge of the sail is concave, and the tips of the mast and boom project for some distance beyond the fabric of the sail. The mast is stayed by a rope running from a little below the masthead to the center of the bow projection, and by three other ropes two of which run to the stern outrigger crosspiece a short distance outside the gunwales of the canoe, while the third is attached to the crosspiece near its outer tip. In the picture the sail is directly over the canoe, between the two inner stays, a system impossible in practice. It seems probable that the author placed it in this position in order to better show

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501 285 the arrangement of the stays. A slack line is shown running from the outer end of the boom to the stern seat to control the sheet. In the drawing the lower end of the boom is concealed, but it seems probable that, as in the modern sail, it was not attached to the mast. In the background of the picture there are two small distant canoes one of which is shown under way with the sheet paid out. The side stays are fastened to the bow instead of to the stern outrigger crosspiece, while the bow stay is replaced by a single stern stay. The second canoe is shown with the sail furled, apparently by bringing the boom up against the mast. The method of stepping the masts of the ancient canoes was not ascertained. According to information obtained by Handy, a square rail was used, with a spar at the top and bottom.

## PADDLES

501 Porter's mention of "paddles more resembling an oar" (49, p. 152) would imply that more than one type of paddle was in use in the Marquesas, but all the specimens seen or described by informants belong to a single well defined type.

[824] The paddles were made of rose wood, and were often decorated with carving. The manufacture of small highly ornamented paddles of somewhat degenerate form intended for sale as curios has continued until the present time, but the natives have lost the skill necessary for the manufacture of the large genuine specimens; the only ones seen in actual use were old.

The peculiar shape of Marquesan paddles makes them easily recognizable in any collection. (See Pl. XLIII, *B*.) In length they range from 4 feet, 8 inches to 5 feet, 8 inches, although the steering paddles used on war canoes were probably still longer. The average length is slightly over 5 feet. For convenience in description they may be divided into three parts, the shaft, the blade, and the terminal knob, a projection below the blade.

The shaft is approximately circular in cross section and tapers very slightly toward the upper and lower ends. In some old specimens the central part is somewhat flattened laterally, but this may be due to long use. The upper end terminates in a cylindrical knob, slightly thicker than the shaft, or in a flat expanded transverse grip with a concave upper surface. Only one specimen of this sort was seen, the grip in this having been originally two inches in width. At the lower end the shaft passes imperceptibly into the blade.

The total length of the blade, exclusive of the terminal knob, is one foot to 15 inches, with a maximum width of 6 to 7 inches. The wings of the blade curve outward gradually from the shaft to the point of maximum width, which in a blade one foot long is slightly less than 11 inches from the upper end. From this point they curve inward sharply toward the base of the terminal knob. The thickness of the wings at the edges is about ¼ inch, this thickness remaining uniform for the entire length of the blade. The center of the blade has a thickness of ¼ to ⅓ inch, gradually increasing toward the ends. The outer surface of the blade is convex, either smoothly rounded or with a slight longitudinal ridge along the center. The inner surface is concave, the center, at the point of greatest depth, being sometimes as much as ½ inch below the level of the wing edges.

The form of the terminal knob may be seen from Plate XLIII, *B*. The knob is connected with the blade by a short neck which curves upward and backward. The inner side of this neck bears a rather sharp longitudinal ridge which continues for a short distance up the blade. The outer surface is flat or bears a much lower longitudinal ridge which continues for a short

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



distance up the blade. The two surfaces meet in a rounded edge into which the wings of the blade blend gradually. The knob proper is set at an angle with the neck, causing it to project slightly backward from the line of the blade. It is sharpened anteriorly and posteriorly except at the rear end of the outer surface, where it is sometimes flat. The knob thickens gradually from the neck to a point about two-thirds of its length from the base, then thins gradually to the tip, which is finished with a blunt edge. 501

This knob is the most characteristic feature of Marquesan paddles and its uniformity in shape and proportion in different specimens seems to indicate that it served some definite purpose. A number of explanations were given by the natives, the usual one being that it caused the paddle to make a pleasant sound when pushed through the water. Other explanations are: That the knob made the paddle a more effective club in sea fights; that it prevented the blade from being splintered when pushing off the rocks; that by means of it the paddle could be rested securely on the forked top of the outrigger; and that it kept the blade from side slipping in the water. The knob does fulfill all these purposes. A somewhat similar knob appears on paddles from Easter Island and Mangareva.

The manufacture of paddles of this sort called for a carefully preconceived design and great skill in execution. The finished instrument justifies the care expended upon it, however, for in balance and effectiveness these curiously shaped paddles are greatly superior to the European forms.

## DECORATION OF PADDLES

In pre-European times paddles were decorated with carving applied to the knob at the upper end of the shaft, the blade, and possibly the terminal knob. Carved paddles are still manufactured in the Marquesas for sale to Europeans, and practically all specimens now in museums belong to this class. No authentic ancient specimen was seen, and it is impossible to tell whether the designs employed in the modern paddles are the same as those used in ancient times. 501 531

Two distinct techniques were employed. In paddles made of *mio* wood the designs were simply carved upon the surface. In paddles made of *hutu* wood (*Barringtonia speciosa*) on the other hand, the surface was first charred to blacken it, and the designs were then cut through the blackened wood to the natural white wood underneath, making the finished design show in sharply contrasted black and white. *Hutu* wood was rarely used for real paddles, and it seems doubtful whether this second technique was applied to paddle decoration in ancient times. 501 531 824

The knob at the upper end of the paddle shaft was carved either into two small tiki figures, placed back to back, or into two heads similarly arranged. The convention of representation was the usual one, flat features, spectacle eyes, and broad mouth. In some paddles the space between the figures was pierced. [532]

The paddle blades were elaborately carved on both the upper and lower surfaces, and in one specimen the decoration extended a short distance up the shaft. The area to be decorated was divided transversely into three or more zones which were treated as separate units. The lowest of these zones was semicircular, the outer edge corresponding to the bottom of the paddle blade. There was a strong tendency to make a large semicircular figure the principle feature of

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501 531 at least one other zone. In all the specimens seen there was a complete absence of simple angular-geometric designs of the house post type. The designs used were selected about equally from those regularly used for tattooing and bowl carving. Tiki faces and even flattened figures were noticed in a few paddles. Edge-Partington (20, p. 5) shows a paddle having a design carved on the inner side of the blade and two heads in high relief on the outer side.

It would appear that paddle designs did not constitute a distinct class. All the specimens studied are more or less recent, however, and it is quite possible that there were originally distinctive paddle designs which have been gradually overlaid or lost. In many of the commercial specimens the terminal knob is decorated with very simple angular-geometric figures like those carved on house posts, but it is impossible to say whether the practice is ancient.

## BAILERS

501 The constant leaking of a built up canoe made the bailer a necessary part of its equipment, and bailers of the ancient form are still in constant use throughout the group. [824] These bailers are made of *mio* or temanu wood, and are shaped like a sugar scoop with the handle reversed, that is, projecting forward over the cavity. The top of the bailer is perfectly flat, the upper side of the handle being flush with the edges of the scoop. The bottom is also flat, rounding up gradually in the rear. The forward edge of the scoop is straight, the upper corners being rounded off. In ancient times some bailers were carved, but no decorated examples were seen. (See Pl. XLIII, *D* and *E*.)

## CANOE MODELS

Numerous references have been made in the course of this paper to canoe models. [439] At the present time many of these models are made for sale to Europeans. The industry centers in Fatu Hiva. It is certain that models were also made in early times, and there is mention of their use in connection with religious ceremonies. The modern models are elaborately carved all over; the designs used are borrowed from tattooing and bowl carving. (See Pl. XLIV, *B*.) The designs used upon the superstructure are usually simple angular-geometric motifs of the sort said to have been used upon the actual canoes, although in the recent specimens there is a tendency to apply curvilinear designs to these parts also, especially to the side planks. [824] Many of the recent examples are made of *hutu* wood, treated by the method mentioned in connection with the paddles.

The desire for quantity production has led in the newer models to a lack of accuracy in the proportions of the various parts and the omission of all details not visible when the canoe is assembled. They can therefore serve as a guide only to the general form of the ancient craft. The really old models

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



on the other hand are decorated only on those parts which were decorated in the actual ancient canoe and show a close attention to all details, even those hidden when the canoe was assembled, which is good evidence that the maker attempted a replica of the actual craft. At the present time the natives make models of the European vessels which visit the group and these models are properly proportioned and surprisingly accurate as to detail, the original of any model being at once recognizable. It seems probable, therefore, that the old models reproduce the real canoes with similar exactness, and it seems justifiable to use them for illustration and for the settlement of doubtful points.

Probably the earliest model now preserved is that in the Peabody Museum of Salem, Mass., which was made before 1820. (See Pl. XLIV, *A*.) As may be seen from the photograph it differs somewhat from the descriptions obtained. There are no separate bow and stern piece, the figurehead rests directly on the top of the cutwater, and the outrigger is unusual in form with a direct attachment. It is possible that it reproduces a special type, now forgotten, but it is equally possible that its extremely small size has led to the omission of certain features. Next in age to this model are two preserved in the Bishop Museum (Pl. XLIV, *C*) which agree in every way with the descriptions given, and appear to be accurate replicas of the ancient craft. The highly decorated example (Pl. XLIV, *B*) is comparatively new, and was probably made for sale to Europeans.

## COMPARISON OF POLYNESIAN CANOES

The simple dugout is of such widespread use among primitive peoples that a consideration of its occurrance is of little or no comparative value. Quite the reverse is true, however, of the built up canoe, as such craft offer a wide field for possible variation. If we study the Polynesian canoes of this sort we find that in Tonga and Samoa, and from there eastward to the Society Islands, these craft were built up of many sections, each cut to fit its position in the whole. These sections were fastened together by cords passed not through the body of the plank, but through oblique holes cut in flanges or projections left on the inner side of each section at the time it was hewn. No lashings were visible on the outer surface, which, after the boat was assembled, was rubbed down to an even finish. The sections were so accurately fitted that it was often difficult to detect the joints. In Hawaii, the Marquesas, and New Zealand, the built up canoe consisted of five parts, an underbody—hewn when possible from a single log—bow and stern pieces, and side planks. These were attached by lashings passed through holes in the body of the plank so that they were exposed on the outside. The Samoan and Tongan craft had a sharp cutwater and were flat at bow and stern. Certain parts of the larger Samoan canoes were carved but the bow and stern decorations were limited to knobs carved on the flat upper surface or on the

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



50/171 edges of the gunwales. Only one Samoan form, said to be a result of foreign influence, had an upward curved projection at bow and stern. In the Hawaiian canoes we find no distinct cutwater as the bottom curves upward and narrows to a point. The bow is unornamented but has a short projection. In the Marquesas and New Zealand the bow and stern of the underbody are of the form just described for Hawaii. The bow piece extends for some distance beyond the end of the underbody while the stern piece curves upward to form a high tail. In the Society Islands the canoes were built of many pieces. The entire hull curved upward at the stern rising almost vertically for some distance, and was crowned with carved figures. At the bow there was a second projection which on some was decorated.

The sails used in Hawaii, the Marquesas, and New Zealand were made in the form of a triangle, with the apex at the foot of the mast and the boom along the lower edge. In Tonga and Samoa, on the other hand, the sail was supported by a yard, or yards, hung from the masthead. The Society Islands sail was fundamentally of the first mentioned type, but differed in having the upper end of the boom recurved.

Bailers appear to have been much the same everywhere in Polynesia, but were decorated with carving only in New Zealand and the Marquesas. Marquesan paddles appear to have no exact oceanic parallels, but resemble somewhat those from Easter Island and Mangareva. It is interesting to note in this connection that many of the Hawaiian paddles have on either side, near the tip of the blade, a short rib which serves no practical purpose. It seems possible that this is a survival of an earlier knob or end projection.

It is apparent that in the canoes, as in the houses, there are clear indications of an eastern and a western type. The eastern type is characterized by the use of only five essential parts, bound together by lashings which are visible externally, and by the use of a triangular sail and boom. The western is characterized by the use of many parts bound together by lashings, invisible externally, and by the use of a sail with a movable yard hung from the masthead. The use of ornate bow and stern pieces is unknown in the western area, with a single possible exception, but is normal in the eastern area except Hawaii.

If we compare the Maori and Marquesan canoes we find a series of resemblances so striking that they argue a close cultural relationship. Both boats are basicly the same in the form and arrangement of the parts, and in both the bow piece terminates in a figurehead. In the smaller Maori canoes this figurehead is a simple face borne on the end of a constricted neck, as in the Marquesan form. In the more elaborate Maori forms the figurehead is carved into a full figure, but the high vertical ornament of the Maori bow pieces finds a parallel

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



in the pierced planks placed along the center of the Marquesan bow piece. In both we have the high ornamental stern projection. In both, the upper edges of the side planks were expanded to form flat gunwales and the planks themselves were often decorated with carving. In both the Maori and Marquesan canoes, the strips covering the outside of the seams between underbody and side plank were blackened and were decorated with tufts of white feathers at the lashings. Among the Maori, the feathers for this seam decoration were obtained from the shearwater, and although the species of bird from which the Marquesans obtained their feathers for this purpose was not identified, the native descriptions of the habits of the birds makes it almost certain that these people also obtained their decorations from the shearwater.

The resemblances just noted are too close and numerous to be the result of independent evolution, and although the canoes of the two groups differed in certain minor structural details, the conclusion is inevitable that they represent divergent developments of a single type. The existence of such closely related forms at almost opposite ends of the Polynesian crescent, when the space between is occupied by forms which differ from both more widely than the Maori and Marquesan canoes differ from each other, is best explained by the assumption that they represent marginal survivals of a form which had been diffused over the whole eastern area, but which has been destroyed or overlaid in the intervening regions. The Society Island canoes, with their combination of high stern and prow with many piece construction, are probably a hybrid type resulting from the superposition of the western style of construction upon the Maori-Marquesan form. The exact relation of the Hawaiian canoe to this Maori-Marquesan form is difficult to establish. Basicly they are the same, but the Hawiian canoe lacks all the ornamental features of the other type. It seems probable that both are descended from a common ancestor while the relatively greater simplicity of the Hawaiian canoe suggests that it stands nearer to this original form. The features which distinguish the Maori-Marquesan type—the high bow and stern and profuse decoration—are strongly suggestive of Melanesia, and it seems probable that they are a result of Melanesian influence.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



227 171 In Hawaii artifacts in every way identical with this object are quite common and were used as sinkers for squid hooks. The Marquesas was an important point of call for whalers in early days, and the first missionaries to establish themselves in the group were Hawaiians, so it is probable that this object was imported from that group during the historic period.

## ANCHORS

● 501 Native accounts of the ancient fishing methods mention the use of anchors, but it seems probable that these were simply rough stones. A single worked specimen was seen in Taiohae, Nuka Hiva. It consisted of a conical stone of oval cross section about 10 inches high and 7 inches in diameter, through the upper end of which a hole about ¾ of an inch in diameter had been pierced. The natives were unable to identify this specimen, and as it was found among the debris of a trader's store it may be either of European workmanship or due to European influence.

## PIPES

276 324 [539] The use of tobacco in the Marquesas is almost certainly post-European, but the plant was cultivated there very early in the historic period. Clay pipes in burial caves that contain no other evidences of European contact indicate that they were among the earliest trade objects and most of the stone pipes appear to have been made at a time when the native culture had undergone little, if any, change. The clay pipes referred to are clearly the prototype from which the stone pipes were evolved, but the Marquesan pipe makers were no slavish imitators and their work shows considerable originality.

The material used was a rather soft, even-textured volcanic rock, and the shaping was probably done with metal tools, although the fine finish of most of the specimens makes it impossible to say whether such tools were always used. The bowl form was like that of the European clay pipes of the early nineteenth century, but the other features vary greatly. The simplest form is shown on Plate XLIX, *C*. It consists of a simple bowl 1⅜ inches long and about ¾ of an inch wide, with a hole pierced in one side for the stem. The bottom of the bowl is decorated with a short cylindrical knob.

A more elaborate specimen, seen in Hanahehe, Hiva Oa, consisted of a similar bowl, without the knob, which had at the bottom two projections ⅜ of an inch long, placed directly opposite each other. Both these projections were drilled [531] to take stems. The bowl was covered with lightly incised designs which had been almost obliterated by handling. The use of multiple stems appears to have been rather common and according to reliable informants some specimens had as many as four.

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

1771
501



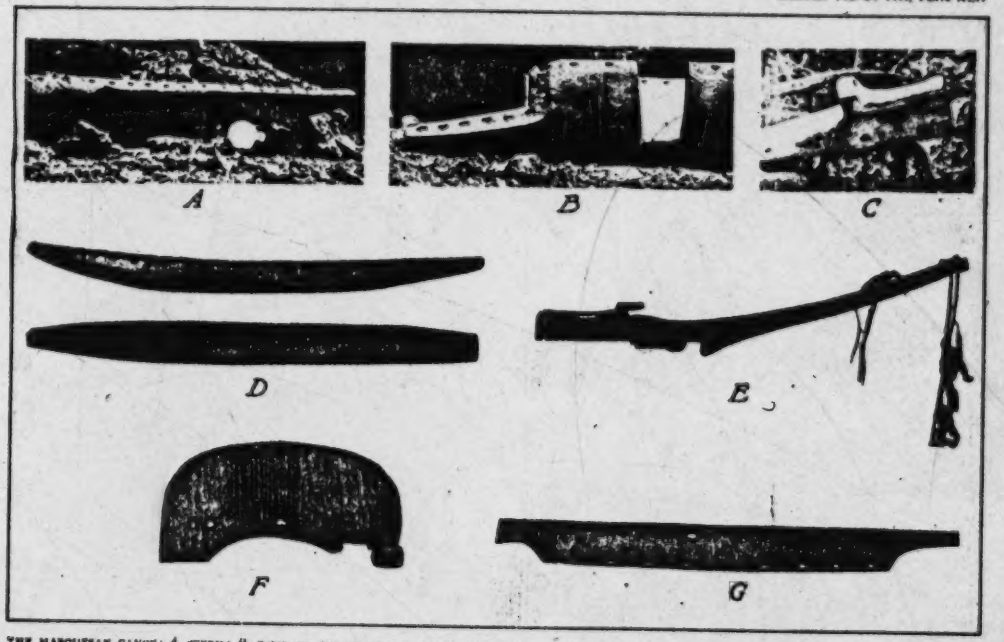
COMPARATIVE TABLE MATERIAL CULTURE—Continued

CANOES

| | Marquesas | New Zealand | Hawaii | Society Islands | Samoa | Tonga |
|---|---|---|---|---|---|---|
| *Construction* | Five pieces, dugout body, bow and stern pieces, two side planks; plank canoe also used as rare form | Five pieces, dugout body, bow and stern pieces, two side planks; no plank canoes | Five pieces, dugout body, bow and stern pieces, two side planks; plank canoe known | Made of several courses of planks cut to fit together accurately | Made of several courses of planks cut to fit together accurately | Made of several courses of planks cut to fit together accurately |
| *Bow* | Long projection, horizontal or slightly curved upward; head carved on outer end | Long horizontal projection; head or figure carved on outer end | No projection, small upturned knob | Long projection, horizontal or curved upward; small figure sometimes carved on outer end | No projection, upper surface decorated with shells and carved knobs; figureheads used in ancient times | No projection or decoration |
| *Stern* | High upward curving plank | High upward curving plank | Small upturned knob, no ornament | Whole body of canoe curved upward for some feet | No projection; decorated like bow | No projection or decoration |
| *Seams* | Covered with strips inside and out; strips blackened and decorated with white feathers at the lashings | Covered with strips inside and out; strips blackened and decorated with white feathers at the lashings | Not covered with strips | Not covered, outside of canoe rubbed down to give a smooth close joint at seams | Not covered, outside of canoe rubbed down to give a smooth close joint at seams | Not covered, outside of canoe rubbed down to give a smooth close joint at seams |
| *Lashings* | Visible both inside and out | Visible both inside and out | Visible inside, almost concealed outside | Invisible outside | Invisible outside | Invisible outside |
| *Decoration* | Elaborate carving on bow, stern and side planks | Elaborate carving on bow, stern and side planks, also painting | No decoration | Small figures and other carving on bow and stern | Slight use of carved decoration | No decoration |
| *Double canoe* | Two canoes of equal size temporarily connected | Rarely used; two canoes of equal size | Two canoes of equal size | Two canoes of equal size temporarily connected | Canoes of different size permanently connected | Canoes of different size permanently connected |
| *Sail* | An inverted triangle with the apex at the foot of the mast | An inverted triangle with the apex at the foot of the mast | An inverted triangle with the apex at the foot of the mast | Modified form of the inverted triangle sail | Inverted triangle sail and lateen sail suspended from the mast head | Lateen sail suspended from the mast head |

501






THE MARQUESAN CANOE: *A*, STERN; *B*, FORWARD END OF REAR SECTION OF UNDERBODY; *C*, STERN PIECE OF OLD CANOE; *D*, SIDE AND TOP VIEWS OF UNDERBODY OF OLD CANOE MODEL; *E*, STERN PIECE OF OLD CANOE MODEL; *F*, SUPPLEMENTARY BREAK-WATER; *G*, SIDE PLANK OF OLD CANOE MODEL.

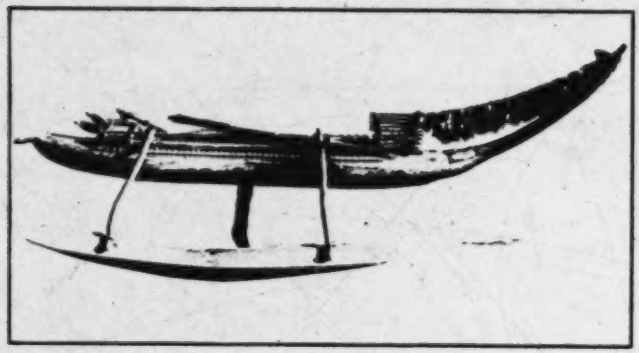
End plate 3

7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6

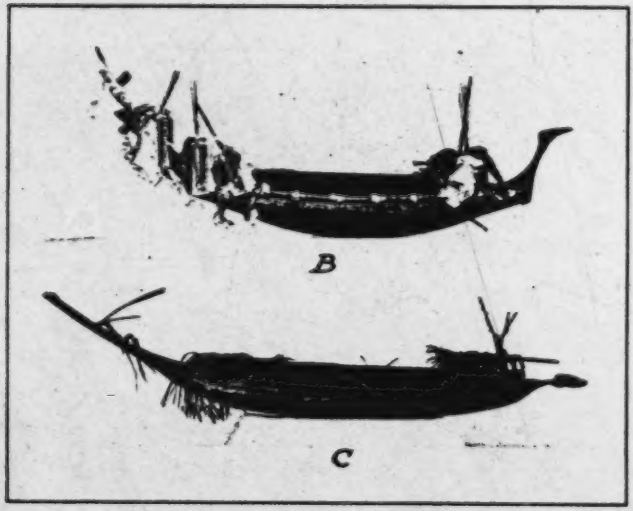
7: Linton E-5 (1920-1921) 1923 OX6 Marquesas OX6



501



A



B

C

CANOE MODELS: *A*, VERY OLD MODEL (PEABODY MUSEUM, SALEM); *B*, MODERN MODEL, MADE FOR SALE; *C*, OLD MODEL, REPLICA OF ACTUAL CRAFT.

[end plate 5]

9: Greiner E-4 (no date) 1923 OX6 Marquesas OX6



zones in which a semi-circle is substituted for a V in a series of V's, used to fill a triangle. One post shows a series of concentric ovals superposed upon a series of V's, and a group of six wide horizontal lines superposed upon the concentric ovals making a triple overlapping of design.

One design motif consists of two quarter sections of concentric ovals placed side by side so as to form a half oval with the sections separated by two, or by three, horizontal lines which project out beyond the outer oval. (Pl. III, *g*). This design is probably related to the concentric ovals pierced on one side by a horizontal line, used frequently in under-arm tattooing (18).

Members of the Bayard Dominick Expedition photographed a house post which displays a zone filled with two segments of concentric ovals and a small pierced oval so arranged as to give the appearance of a *mata*. The representation may not have been intentional, for no other example of a *mata* carved on a house post is known.

## Designs on Canoe Models

The study of designs used to decorate canoes has of necessity been limited to an examination of canoe models as no complete Marquesan canoes have been preserved from ancient times and the fragments of old canoes photographed by members of the Bayard Dominick Expedition do not show any designs. The old canoe models in the collection of the Bernice P. Bishop Museum are very exact in their construction so that it seems probable that the designs carved on those models are likewise good replicas of the ones formerly used. The newer models are carved on the bottom as well as on the bow, stern, and side planks. Canoes which actually saw service were not carved in this manner and it is therefore difficult to judge the value of the designs on the recent models.

Like the house posts, the designs on the canoe models are inscribed between parallel lines which run transversely to the long axis of the canoe. These zones are of various widths and some of them are divided longitudinally. Both angular geometric and curvilinear patterns are used separately and in combination. On the bottom of one model are no angular geometric patterns and on the side planks only two angular figures consisting of concentric triangles at either end (Pl. VI, *d*). One motif on the top of the bow piece combines angular geometric with curvilinear figures.

The bow and stern pieces and side planks of most of the canoe models are carved with purely angular geometric designs. These are for the most part straight, horizontal, and diagonal grooves used in series to separate zones and also to fill zones, diagonal grooves so arranged as to give the